

Claims

- [c1] What is claimed is:
- 1.A computer system comprising:
a motherboard; and
an audio circuit integrated on the motherboard, the audio circuit comprising a Codec IC and a vacuum tube amplifier, wherein the Codec IC outputs an audio signal to the vacuum tube amplifier to amplify the audio signal.
- [c2] 2.The computer system of claim 1 wherein the audio circuit further comprises an input end connected to the vacuum tube amplifier for inputting external audio signals, and an output end connected to the vacuum tube amplifier for outputting the amplified audio signal.
- [c3] 3.The computer system of claim 2 wherein the vacuum tube amplifier further comprises a first filter circuit connected between the audio circuit and the vacuum tube amplifier, and a second filter circuit connected between the audio circuit and a vacuum tube of the vacuum tube amplifier.
- [c4] 4.The computer system of claim 3 wherein the audio circuit further comprises a filament heating circuit for heating a filament of the vacuum tube to an operating temperature, and a voltage booster to provide the vacuum tube an operating voltage.
- [c5] 5.The computer system of claim 2 wherein the external audio signals are generated by a sound card plugged into the motherboard or by a DVD player.
- [c6] 6.The computer system of claim 1 further comprising a first switch connected between the Codec IC and the audio circuit, the first switch when turned on inputs the audio signal outputted from the Codec IC into the audio circuit.
- [c7] 7.The computer system of claim 1 wherein the Codec IC outputs the audio signal to a lineout port mounted on the motherboard.
- [c8] 8.The computer system of claim 1 further comprising a second switch connected to the audio circuit and a south-bridge chip for outputting a control signal to start up or shut down the audio circuit.

- [c9] 9.The computer system of claim 1 further comprising a power supply connected to the motherboard for providing DC power to the motherboard.
- [c10] 10.The computer system of claim 1 further comprising a frequency isolation wall for isolating the audio circuit from interference from other devices.
- [c11] 11.The computer system of claim 1 wherein the vacuum tube amplifier is a class-A current preamplifier.
- [c12] 12.The computer system of claim 11 wherein the audio circuit further comprises a voltage amplifier for cascading with the class-A current preamplifier.
- [c13] 13.The computer system of claim 1 wherein the vacuum tube is a 9-pin double-triode vacuum tube.
- [c14] 14.A motherboard comprising:
a Codec IC for processing an audio signal;
a vacuum tube amplifier circuit for amplifying the audio signal outputted from the Codec IC with a replaceable vacuum tube; and
a vacuum tube power supply circuit for supplying voltage and current to the vacuum tube amplifier circuit.
- [c15] 15.A method for improving audio quality in a motherboard having a Codec IC for processing an audio signal, the method comprising:
providing a vacuum tube amplifier circuit for amplifying the audio signal with a vacuum tube, wherein the Codec IC outputs the audio signal to the vacuum tube amplifier circuit; and
providing a vacuum tube power supply circuit for supplying voltage and current to the vacuum tube amplifier circuit.
- [c16] 16.The method of claim 15 further comprising replacing resistors and capacitors of the vacuum tube amplifier circuit to change amplifying characteristics of the vacuum tube amplifier circuit.
- [c17] 17.The method of claim 15 further comprising providing a first switch connected between the Codec IC and the vacuum tube amplifier circuit, the first switch when turned on inputs the audio signal outputted from the Codec IC into

the vacuum tube amplifier circuit.

[c18] 18.The method of claim 15 further comprising providing a second switch connected to the vacuum tube amplifier circuit and a south-bridge chip for outputting a control signal to start up or shut down the vacuum tube amplifier circuit.

[c19] 19.The method of claim 15 further comprising providing a frequency isolation wall for isolating the vacuum tube amplifier circuit.

[c20] 20.The method of claim 15 wherein the vacuum tube amplifier circuit further comprises a filament heating circuit for heating a filament of the vacuum tube to an operating temperature, and a voltage booster to provide the vacuum tube an operating voltage.